AMENDMENTS TO SPECIFICATION:

Please replace paragraph **[0034]** with the following amended paragraph:

[0034] It should be appreciated that from Eq. (9) the computation of the gradient is based on obtaining the partial derivatives $\partial f / \partial x$ and $\partial f / \partial y$ at every pixel location. One skilled in the art will appreciate that the partial derivatives may be obtained in a number of ways to do this. One approach conducted here is shown in Eq. (10). The component of the gradient vector in the x (horizontal) direction is defined as:

$$G_x = \partial f / \partial x = f(x, y-1) - f(x, y+1) \tag{10}$$

and in the y (vertical) direction the component is defined as:

$$G_y = \partial f / \partial y = f(x-1, y) - f(x+1, y) \tag{11}$$

Thus, the gradient vector in the x direction looks at a pixel value to the left (f(x,y-1)) and the right (f(x,y+1)) of the pixel location, while the gradient vector in the y direction looks at a pixel value above (f(x+1,y)) and below (f(x-1,y)) the pixel location. It should be appreciated that the horizontal variable direction (x) of equation 10 is held constant, while the vertical variable direction (y) of equation 11 is held constant. From the above definitions, it is possible to calculate the approximate magnitude of the gradient, defined as:

$$|\mathrm{G}[f(x,y)]| \approx |G_x| + |G_y|.$$

Letting $\alpha(x,y)$ represent the direction angle of G at location (x,y), it follows from vector analysis that

$$\alpha(x,y) = tan^{-1}(G_y / G_x) \times 180 / \pi$$

where the angle is measured with respect to the x axis. Of course, the embodiments described herein may calculate the angle relative to the y axis.

Please replace paragraph **[0039]** with the following amended paragraph:

[0039] Figure 5 is an exemplary image 120 defined in QCIF having vertical and horizontal edge regions which is subsequently upscaled through the embodiments described herein. Figures 6A-6C illustrate corresponding 4x upscaled images

associated with region 122 of Figure 5. Figure 6A utilized bilinear interpolation for upscaling, Figure 6B utilized bicubic interpolation for upscaling and Figure 6C utilized the weighted interpolation scheme defined herein for upsclaing. Figures 7A-7C illustrate corresponding 4x upscaled images associated with region 124 of Figure 5. Figure 7A utilized bilinear interpolation, Figure 7B utilized bicubic interpolation and Figure 7C utilized the weighted interpolation scheme. In either case, the weighted interpolation algorithm shows sharper vertical and horizontal edges than those by either bilinear or bicubic interpolation.

Please replace paragraph **[0041]** with the following amended paragraph:

[0041] Figure 9 is a flow chart diagram illustrating the method operations for upscaling image data in accordance with one embodiment of the invention. The method initiates with operation 130 where a gradient value associated with a pixel location of the image data is identified. The gradient value is defined as a two-dimensional vector as discussed above with reference to Equation 9. The computation of the gradient is based on obtaining partial derivatives at each pixel location. The method then advances to decision operation 132 where it is determined whether a direction associated with pixel location is either a horizontal direction or a vertical direction. Here, the component of the gradient vector in either the horizontal or vertical direction is computed relative to pixels located on either side of the pixel location or pixels located above and below the pixel location. In addition, a magnitude associated with the gradient is also calculated here. A direction angle associated with the pixel location is then computed based upon the horizontal component and the vertical component which was previously calculated. From the direction angle, whether the pixel is associated with a horizontal or vertical direction will be determined. If the direction associated with the pixel is not horizontal or vertical, then the method moves to operation ~~133~~ 136, where a bilinear interpolation scheme is applied to the pixel location.

Please replace paragraph **[0053]**, with the following amended paragraph:

[0053] The invention can also be embodied as computer readable code on a computer readable medium. The computer readable medium is any data storage

device that can store data, which can be thereafter read by a computer system. ~~The computer readable medium also includes an electromagnetic carrier wave in which the computer code is embodied.~~ Examples of the computer readable medium include hard drives, network attached storage (NAS), read-only memory, random-access memory, CD-ROMs, CD-Rs, CD-RWs, magnetic tapes, and other optical and non-optical data storage devices. The computer readable medium can also be distributed over a network coupled computer system so that the computer readable code is stored and executed in a distributed fashion.